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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/044,802      | 01/11/2002  | Seymour Levine       |                     | 8342             |

7590 03/13/2003

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EXAMINER

TO, TUAN C

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

3663

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

SK

# Office Action Summary

Application No.

10/044,802

Applicant(s)

LEVINE ET AL.

Examiner

Tuan C To

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2002 and 04 February 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16-32, 55 and 56 is/are pending in the application.
- 4a) Of the above claim(s) 15, 33-54 and 57-59 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16-32, 55 and 56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-14, 16-32, 55 and 56 drawn to "Navigation System", classified in class 701, subclass 200.
- II. Claims 15 and 33 are restricted under the status of claims linking.
- III. Claims 34-46, drawn to "Aircraft Collision Avoidance System", class 342, subclass 29.
- IV. Claims 47 and 59, drawn to "Air Traffic Control", classified in class 342, subclass 36.
- V. Claims 48-53, drawn to "Navigation System and Flight Data Recorder", classified in class 701, subclass 14 and 35.
- VI. Claim 54, drawn to "Ground Incursion System", classified in class 701, subclass 301.
- VII. Claim 57, drawn to "Method for Determining the Attitude of a Craft", classified in class 244, subclass 164.
- VIII. Claim 58, drawn to "Method for Managing Electrical Power of Navigation System", classified in class 370, subclass 316

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Ken S. Fisher in 02/2003 a provisional election was made with traverse to prosecute the invention of Group I, 1-14, 16-32, 55 and 56. Affirmation of this election must be made by applicant in replying to this Office action. Claims 15, 33-54, and 57-59 have been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 18, 29, and 30 are rejected under 35 U.S.C. 112 (second paragraph) as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 18, the applicant recites that the memory card selected from the group consisting of an inertia absorbing material. It is not quite clear about this material. The applicant should provide the explanation in order to clearly define the invention.

In claim 29 and 30, the limitation "tamper determining means to detect tampering with the craft" is not clear. The applicant should clarify this limitation to make the claim clearer.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1, 3, 5-11, 14, 55 and 56 are rejected under 35 U.S.C. 102(e) as being unpatentable by Lin et al. (US 2002/0021245A1).

The reference to Lin et al. is directed to an integrated GPS/IMU method and micro-system including all features recited in said claims.

Lin et al disclose several features that are relevant to the following: GPS receiver has first output for providing a signal indicative of the position of the navigation system (see figure 3, page 2, paragraph 0019), magnetometer measures earth's magnetic field, said magnetometer has a second output for providing signal (see page 3, paragraph 0047), acceleration sensor measures axis of acceleration of the navigation, having third output (see page 4, paragraph 0066), a rotation sensor measures more axis of rotation, having a fourth output (see page 4, paragraph 0066), a computing device having: several inputs, at least one input communicates with each of said first, second, third, and fourth of outputs (see figure 1), three-axis rate gyroscope is a MEMS (magnetometer) (see page 4, paragraph 0076), power supplied by a battery (see figures 1, and 9), RF data link (see page 5, paragraph 0088), Kalman filter (see page 6, paragraph 0015).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al. (US 2002/0021245A1) and in view of Burgett et al (US 6522298 B1).

As discussed in the previous paragraph, Lin et al disclose all of limitations recited in the independent claims 1 and 55 except for the barometric sensors for measuring atmospheric pressure and providing signals. The second reference mentioned above overcomes the missing feature from Lin et al. Burgett et al. provide a device and

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method for calibrating and improving the accuracy of barometric altimeters with GPS-derived altitudes. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Lin et al. to include the teachings of Burgett et al. in order to determine the stability of various absolute pressure, and also to maintain the accuracy over a wide temperature range.

Claims 4, 13, 16, 19, 20, 22, 24-26, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al. (US 2002/0021245A1) and in view of Lin (US 6415223).

Claims 4, 13, 16, 19, 24-26: The U.S Patent No. 245A1' to Lin et al. disclose all limitation recited in claims 1. However, Lin et al. do not disclose a display means for visually displaying information from the computing device. The second reference to Lin (US 6415223) is directed to a typical navigation system having a display for displaying information (see column 6, lines 3-5). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to improve the system of Lin et al. '245A1 by including said display in order to allow pilot, flight operator or crew member easily retrieves the aircraft data or observes it during the flight.

Lin (US 6415223) additionally discloses a database of the magnetic fields of the earth, wherein said database consists: 2-D map, topographical, oceanographic (see column 5, lines 66 and 67; column 6, lines 1-10).

Claim 20: Lin et al. disclose that IMU is a MEMS IMU.

Claim 22: As illustrated in page 3, paragraph 0044, Lin et al. is clearly disclose the MEMS accelerometers.

Claim 31: Lin discloses that with the map display 7 (see figure 1), one pilot is able to retrieve a map data.

Claim 32: Lin also discloses the Kalman filter (see figure 6).

Claims 23, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al. (US 2002/0021245A1), Lin (US 6415223), and further in view of Lemelson et al. (US 2002/0022927A1).

Claim 23: As discussed in the preceding paragraph, the combination of Lin et al. and Lin addresses all features claimed in claim 19 except for an audio transducer. The third reference to Lemelson et al provided the missing features from said combination. As shown in figure 3 of Lemelson et al, speaker driver 72 is a device that allows a pilot receives the related-aircraft information through the audible signal. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to improve the system of Lin et al. '245A1 and Lin '223 by the teaching of a speaker in order to provide pilot any information related to aircraft through the audio signal.

Claims 27 and 28: In addition, in figure 3, Lemelson et al. teach a brake servo and accelerator servo.

Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al. (US 2002/0021245A1) and in view of Billebaud (US 6202931B1), Simmons (EP0697806A1).

In the specification, Lin et al. is missing to point out the memory card that consists of insulating material or corrosion resistant coating. The above-mentioned



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references to Billebaud and Simmons are both teaching about the memory card that consists the insulating material or corrosion resistant coating (see entire document). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include such the material of said memory card in order to protect the card during the transporting from one place to another place or during inserting or removing the card out of computers or electronic equipments.

### ***Conclusion***

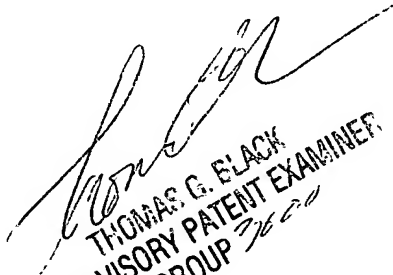
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan C To whose telephone number is (703) 308-6273. The examiner can normally be reached on from 8:00AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (703) 305-8233. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7687 for regular communications and none for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

/tc

March 10, 2003

  
THOMAS G. BLACK  
SUPERVISORY PATENT EXAMINER  
GROUP 3663